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(71) Applicant (for all designated States except US): **SILECS OY** [FI/FI]; Tietotie 3, FIN-02150 Espoo (FI).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **RANTALA, Juha** [FI/FI]; c/o Silecs Oy, Tietotie 3, FIN-02150 Espoo (FI).

(74) Agent: **SEPPO LAINE OY**; Itämerenkatu 3 B, FIN-00180 Helsinki (FI).

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(54) Title: **LOW-K-DIELECTRIC MATERIAL**

(57) Abstract: Method for forming a low dielectric constant structure on a semiconductor substrate by CVD processing. The method comprises using a precursor containing chemical compound having the formula of  $(R1-R2)_n-Si-(X1)_4-n$ , wherein X1 is hydrogen, halogen, acyloxy, alkoxy or OH group. R2 is an optional group and comprises an aromatic group having 6 carbon atoms and R1 is a substituent at position 4 of R2 selected from an alkyl group having from 1 to 4 carbon atoms, an alkenyl group having from 2 to 5 carbon atoms, an alkynyl group having from 2 to 5 carbon atoms, Cl or F; n is an integer 1-3. The present precursors allow for a lowering of the electronic dielectric constant compared to conventional dielectric materials, such as silicon dioxide or phenyl modified organo-containing silicon dioxide.

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